Listing of Claims

1. (Canceled)

2. (Canceled)

3. (Currently Amended) The system for serving short message in high rate packet data system in claim 7 [[1]], wherein the short message is transmitted to the terminal by the short message service center working together with the LIMS, PDSN and PCF if the short message service center receives a SM Delivery Request from the short message entity.

4. (Canceled)

5. (Currently Amended) The system for serving short message in high rate packet data system in claim 7 [[1]], wherein the PCF reports location information of the terminal according to a session change case of the terminal to the LIMS.

6. (Canceled)

7. (Previously Presented) A system for serving short messages in a high rate packet data system from a short message entity to a terminal, comprising:

a SMSC (Short Message Service Center) for transmitting the short message;

a LIMS (Location Info. Management Server) for registering and managing location and state information of the terminal, and providing the information to the SMSC;

a PDSN (Packet Data Service Node) for reporting state information of the terminal to the LIMS; and

a PCF (Packet Control Function) for reporting location information of the terminal to the LIMS and providing call state change information of the terminal to the PDSN, wherein the PDSN reports the state information of the terminal to the LIMS according to the call state change of the terminal after receiving the call state change information of the terminal from the PCF, or after ending PPP connection with the terminal.

8. (Previously Presented) A system for serving short messages in a high rate packet data system from a short message entity to a terminal, comprising:

a SMSC (Short Message Service Center) for transmitting the short message;

a LIMS (Location Info. Management Server) for registering and managing location and state information of the terminal, and providing the information to the SMSC;

a PDSN (Packet Data Service Node) for reporting state information of the terminal to the LIMS; and

a PCF (Packet Control Function) for reporting location information of the terminal to the LIMS and providing call state change information of the terminal to the PDSN, wherein the LIMS manages an Internet Protocol address of the terminal and an IP address of the PCF reporting the location information of the terminal to the LIMS when the LIMS registers and manages the location information of the terminal.

9. (Canceled)

10. (Previously Presented) A method for serving short messages in high rate packet data system from a short message entity to a terminal, comprising:

receiving information of the terminal and registering the information to a LIMS (Location Info. Management Server); and

transmitting short messages to the terminal using registered information of the terminal, wherein registering the information to the LIMS comprises:

transmitting location information of the corresponding terminal from a PCF (packet control function) to the LIMS according to session change case of the terminal; and

registering the location information of the terminal to the LIMS, wherein the PCF further transmits an IMSI (International Mobile Station Identity) of the terminal with information indicating the session change case of the terminal and an IP address of the PCF to the LIMS during the terminal information registration process.

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Previously Presented) A method for serving short messages in a high rate packet data system, comprising:

receiving information of the terminal and registering the information to an LIMS (Location Info. Management Server); and

transmitting short messages to the terminal using registered information of the terminal, wherein registering the information to the LIMS comprises:

transmitting location information of the corresponding terminal from a PCF (packet control function) to the LIMS according to a session change case of the terminal;

registering the location information of the terminal to the LIMS;

transmitting state information of the corresponding terminal in a PDSN (Packet Data Service Node) to the LIMS according to the call state change of the terminal; and

registering the state information of the terminal to the LIMS, wherein the PDSN further transmits an IMSI of the terminal with the session change case of the terminal and an IP address of the terminal to the LIMs during the terminal information registration process.

15. (Currently Amended) A method for serving short messages in a high rate packet data system to a terminal, comprising:

receiving information of the terminal and registering the information to a LIMS (Location Info. Management Server); and transmitting a short message ~~messages~~ to the terminal using registered information of the terminal, said transmitting including:

transmitting a request for ~~requesting~~ short message service from a short message entity to a short message service center;

transmitting a request for ~~requesting~~ location and state information from the short message service center to the LIMS;

deciding a session change case of the terminal based on information from the LIMS;

transmitting state information of the ~~corresponding~~ terminal to the SMSC (Short Message Service Center) when the session change case is open or corresponds to a time of handoff; and

transmitting the short message to the ~~corresponding~~ terminal using a different channel according to the corresponding state information, and wherein the short message serving method further comprises:

transmitting session close location information of the terminal from the LIMS to the SMSC when the session change case is in close; and

delaying delivery of the short message according to the location information of the terminal, and transmitting the short message to the terminal when the session of the terminal is open.

16. (Canceled)

17. (Currently Amended) A ~~The~~ method for serving short messages in high rate packet data system to a terminal ~~in claim 15~~, comprising:

receiving information of the terminal and registering the information to a LIMS (Location Info. Management Server); and

transmitting a short message to the terminal using registered information of the terminal, said transmitting including:

transmitting a request for short message service from a short message entity to a short message service center;

transmitting a request for location and state information from the short message service center to the LIMS;

deciding a session change case of the terminal based on information from the LIMS;

transmitting state information of the terminal to the SMSC (Short Message Service Center) when the session change case is open or corresponds to a time of handoff; and

transmitting the short message to the terminal using a different channel according to the corresponding state information, wherein transmitting the short message ~~serving~~ to the terminal using the different channel ~~process~~ according to the state information comprises:

deciding, in the LIMS, a ~~the~~ call state change of the terminal ~~the LIMS~~;

transmitting the short message from the LIMS to the short message service center when the call state change is [[in]] active;

transmitting a request for ~~requesting the~~ short message delivery to the terminal from the SMSC to the PDSN (packet data service node); and

transmitting the short message from the packet data service node to the terminal using a traffic channel.

18. (Currently Amended) A ~~The~~ method for serving short messages in high rate packet data system to a terminal ~~in claim 15~~, comprising:

receiving information of the terminal and registering the information to a LIMS (Location Info. Management Server); and

transmitting a short message to the terminal using registered information of the terminal, said transmitting including:

transmitting a request for short message service from a short message entity to a short message service center;

transmitting a request for location and state information from the short message service center to the LIMS;

deciding a session change case of the terminal based on information from the LIMS;

transmitting state information of the terminal to the SMSC (Short Message Service Center) when the session change case is open or corresponds to a time of handoff; and transmitting the short message to the terminal using a different channel according to the corresponding state information, wherein transmitting the short message ~~serving~~ to the terminal using the different channel ~~process~~ according to the state information comprises:

deciding a call state change of the terminal;

transmitting [[the]] dormant state information from the LIMS to the short message service center when the call state change of the terminal is [[in]] dormant;

requesting [[the]] short message delivery to the terminal from the short message service center to the packet data service node;

transmitting the short message from a [[the]] packet data service node to ~~the~~ a packet control function (PCF) corresponding to ~~having~~ the terminal;

transmitting the ~~corresponding~~ short message from the PCF that received the short message to an ~~the~~ access network corresponding to ~~having~~ the terminal through a signaling channel; and

transmitting the ~~corresponding~~ short message from the access network that received the short message transmitted through the signaling channel to the terminal using a control channel.

19. (Currently Amended) A ~~The~~ method for serving short messages in high rate packet data system to a terminal ~~in claim 15~~, comprising:

receiving information of the terminal and registering the information to a LIMS (Location Info. Management Server); and

transmitting a short message to the terminal using registered information of the terminal, said transmitting including:

transmitting a request for short message service from a short message entity to a short message service center;

transmitting a request for location and state information from the short message service center to the LIMS;

deciding a session change case of the terminal based on information from the LIMS;

transmitting state information of the terminal to the SMSC (Short Message Service Center) when the session change case is open or corresponds to a time of handoff; and

transmitting the short message to the terminal using a different channel according to the corresponding state information, wherein transmitting the short message to the terminal using the different channel ~~serving process~~ according to the state information comprises:

deciding a call state change of the terminal;

transmitting [[the]] idle state information from the LIMS to the short message service center when the call state change is [[in]] idle;

requesting [[the]] short message delivery to the terminal from the short message service center to ~~the~~ a packet control function (PCF) corresponding to ~~having~~ the terminal;

transmitting the ~~corresponding~~ short message from the PCF to an [[the]] access network corresponding to ~~having~~ the terminal through a ~~the~~ signaling channel; and

transmitting the ~~corresponding~~ short message from the access network that received the short message transmitted through the signaling channel to the terminal using the control channel.

20. (Currently Amended) A ~~The~~ method for serving short messages in high rate packet data system to a terminal ~~in claim 16~~, comprising:

receiving information of the terminal and registering the information to a LIMS (Location Info. Management Server); and

transmitting a short message to the terminal using registered information of the terminal, said transmitting including:

transmitting a request for short message service from a short message entity to a short message service center;

transmitting a request for location and state information from the short message service center to the LIMS;

deciding a session change case of the terminal based on information from the LIMS;

~~wherein the short message serving process according to the location information comprises:~~

registering an IMSI of the ~~corresponding~~ terminal from the LIMS to a ~~the~~ registration information delay list when the session change case of the terminal is [[in]] close;

transmitting session close location information from the LIMS to the short message service center; and

registering the IMSI of the ~~corresponding~~ terminal and ~~the~~ short message data from the short message service center to a ~~the~~ short message delay list.

21. (Currently Amended) The method for serving short messages in high rate packet data system in claim 20 [[16]], further comprising ~~wherein the short message serving process according to the location information comprises~~:

transmitting ~~the corresponding~~ session open location information from ~~the~~ a packet control function (PCF) ~~having the base station~~ to the LIMS when a ~~the~~ session of the terminal having IMSI is open;

registering location information of the terminal to the LIMS,

transmitting the session open location information to the short message center if IMSI of the ~~corresponding registered~~ terminal is in the registration information delay list, and deleting the corresponding IMSI from the registration delay list;

transmitting a request to deliver ~~requesting~~ the short message ~~delivery~~ to the ~~corresponding~~ terminal from short message service center that received the session open location information to the PCF corresponding to ~~having~~ the terminal if the corresponding IMSI is in the short message delay list, and deleting the corresponding IMSI from the short message delay list;

transmitting the short message from the PCF to an ~~the~~ access network having the terminal through a ~~the~~ signaling channel according to the short message delivery request; and

transmitting the corresponding short message from the access network that received the short message transmitted through the signaling channel to the terminal using the control channel.

22. (Canceled)

23. (New) The system of claim 7, wherein the SMSC transmits the short message to the terminal in SMS format based on the location and state information registered in the LIMS.